Allergy Abstracts

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Asthma and Hay Fever

The Use of Micronized Therapeutic Agents by Inhalation With Special Reference to Allergic Pulmonary Conditions. Taplin, G. V., and Bryan, F. A.: Ann. Allergy **6**: 42, 1948.

An apparatus is described by which therapeutic agents as finely divided as 1 micron in size, and suspended in air, may be simply administered. Crystallin potassium penicillin mixed with one per cent powdered Benadryl was administered two to six times a day in total daily dosages varying from 50,000 to 200,000 units. Among 320 patients treated by this regime, 4.7 per cent showed local penicillin reactions. These consisted of redness, swelling, or vesiculation of the pharynx, tongue, or larynx. Generalized allergic reactions occurred in 0.94 per cent of cases. Fifty-one patients with intrinsic bronchial asthma and related bronchial disease were treated with micronized penicillin and the results were similar to those obtained with penicillin aerosol therapy. By combining penicillin and streptomycin it was possible to clear the respiratory tract temporarily of all types of bacteria. A favorable response to therapy was manifested by a reduction in cough and expectoration and relief from asthma. Periods of remission of one to eight weeks followed one to two weeks of therapy. Local penicillin reactions occurred in 21.5 per cent of the patients and generalized reactions occurred in 2 per cent. Micronized Benadryl mixed with vasoconstrictors was found to be effective in the symptomatic treatment of asthma. W.

Roentgen Treatment of Bronchial Asthma. Leddy, E. T., and Maytum, C. K.: Radiology **52**: 199, 1949.

The authors had previously reported satisfactory results in 50 per cent of subjects. Roentgen therapy had been employed in patients with moderate or severe asthma only after specific and nonspecific therapy had failed or where a specific etiological agent could not be found. The more severe and constant the symptoms, the better the results. A "high dosage" technique had been used, in which 500 r was given over the mediastinum both anteriorly and posteriorly. Good results were similarly obtained by the authors with a "low dosage" technique in which 250 r was applied over the mediastinum both anteriorly and posteriorly. Improvement was usually noted within one or two days, but the full effect was not obtained for four or five days. Untoward reactions such as nausea were less common with this technique than with the previous one. Therapeutic results were not influenced by age or sex. They were best in cases of long duration. Treatment for recurrences usually was successful. The dosages employed did not injure the tissues. S.

Paroxysmal Dyspnea. Case Report. Bernton, H. S.: Ann. Allergy **6**: 317, 1948.

A 75-year-old woman, with a positive family history of allergy, complained of tightness of the chest, slight wheezing, and orthopnea of four years' duration. Dyspnea often occurred after meals and was frequently accompanied by urticaria. Definite relief was obtained from epinephrine. No respiratory wheeze was heard, but a harsh systolic murmur was present over the precordium. The blood count showed a 10 per cent eosinophilia. Skin tests were essentially negative. X-ray revealed fibrosis throughout both lung fields and some calcification at the right apex. The esophagus was deviated to the right in its lower third due to the presence of a large hiatus hernia which involved one-third the capacity of the stomach. W.

Intravenous Ethyl Alcohol in Status Asthmaticus in Children. Bacal, H. L., and Pedius, S.: Canad. M. A. J. **59**: 410, 1948.

The literature and toxicity of ethyl alcohol are briefly reviewed. A solution of 5 per cent alcohol and 5 per cent glucose in saline was administered intravenously to three children with severe asthma. Relief occurred within a few minutes in each case. K.

Bronchial Asthma Due to Ingestion of Fennel and Fennel Seed. Levy, S. B.: Ann. Allergy **6**: 415, 1948.

Fennel and fennel seeds were found to be etiological agents in the production of asthma in a 9-year-old Italian boy. Intracutaneous tests resulted in positive reactions to ragweed, fennel, and fennel seed. Marked reactions to these substances were elicited on passive transfer. Asthmatic attacks were induced on several occasions by the ingestion of foods containing fennel. Since the exclusion of these foods the patient has been free of asthma. W.

Dermatology

A Clinical Evaluation of the Effectiveness of Hydryllin in the Treatment of a Variety of Dermatoses. Pillsbury, D. M., Perry, D. J., and Livingood, C. S.: J. Invest. Dermat. **11**: 455, 1948.

Hydryllin was administered to 154 patients with various dermatoses of possible allergic etiology. The drug seemed to be most efficacious in the treatment of acute and chronic urticaria, angioneurotic edema, and penicillin dermatitis. Questionable relief was obtained in patients with contact dermatitis or atopic dermatitis. No improvement was noted in most of the patients with eczematous dermatitis, pruritus ani and vulvae, localized neurodermatitis, neurotic excoriations, lichen planus, psoriasis, and erythema multiforme. In over 50 per cent of the patients whose improvement previously had been ascribed to Hydryllin, placebos afforded equal relief. The authors stressed the need of controls in evaluating the beneficial effects of a drug. Hydryllin produced pronounced side reactions in 17 per cent of the patients.

R. WISEMAN.

Repeated Patch Testing in Allergic Eczematoid Sensitization. Witten, V., and Shair, H.: Ann. Allergy **7**: 33, 1949.

Subjects with positive reactions to patch tests with standard allergens were patch tested repeatedly on the back with these substances. Every effort was made to keep the testing technique uniform. The subjects were observed for from four to thirty-five weeks. Consecutive readings were usually not the same. The repeated application of eczematogenic agents, however, failed to produce prolonged or permanent increases or decreases in the level of skin sensitivity during a three-month observation period. Strong concentrations of allergen caused reactions of approximately the same degree, whereas graded dilutions brought out definite variations in the degree of reaction. In those instances where such variations occurred, they tended to show an increase of hypersensitivity. R. WISEMAN.

The Etiology of Woodcutter's Eczema. Tenchio, F.: Dermatologica **97**: 72, 1948.

Lumber workers frequently develop a localized dermatitis about the waistline where a scarf or sash is commonly worn. Contact dermatitis is also seen around the neck of workers who transport wood on their shoulders. The dermatitis occurs only in those working with older trees. A lichen *(Parmelia caperata)* which grows on old tree trunks was found to be the etiological factor. Sweating and exposure to sunlight were contributing factors in the production of the dermatitis. H.

Fisherman's "Dogger Bank Itch," an Allergic Contact-Eczema Due to the Coralline Alcyonidium hirsutum, the "Sea Chervil." Bonnevie, P.: Acta Allergologica **1**: 40, 1948.

A contact dermatitis occurring among fishermen in the North Sea area was proved to be caused by a seaweedlike coralline, "Alcyonidium." Positive patch tests were obtained, using small pieces of the sea chervil itself for testing. There is suggestive evidence that the allergen is present in sea water. Hypersensitive individuals have had relapses after visiting fish auction rooms. The author assumes that such flare-ups were caused by inhalation of the dried antigen, and

not by cutaneous contact. No concomitant mucous membrane allergy was observed. This allergen is one of the few examples of animal allergens producing a contact type dermatitis. H.

Studies in Solar Urticaria. Beal, P. L.: J. Invest. Dermat. **11**: 415, 1948.

With the aid of glass filters and a monochromator, the range of spectral sensitivity was studied in two patients with solar urticaria and was found to be between 2,967 and 3,341 A.U. with a maximum at 3,131 A.U. The urticarial reaction could be transferred passively to normal individuals but not to laboratory animals. The sensitized sites reacted to the active wave lengths with erythema, itching, and whealing as early as thirty minutes after sensitization. The reaction produced by tests at forty-five minutes after sensitization was maximal. One site remained sensitive for five days after injection, but responded weakly. Sites were desensitized by a single test. Passive transfers were successful in 100 per cent of trials in one patient, but in only 33 per cent in the other. In the latter instance, the percentage was markedly increased when the sensitizing serum was obtained ten minutes after an urticarial reaction was produced by radiation of a large area of skin.

The photosensitizing property of the serum was inactivated by heating at 56° C. for thirty minutes and by irradiation with ultraviolet light. It gradually lost its activity on storage in the ice box. It was nondializable. The urticarial reaction could not be produced by heat, cold, or mechanical irritation. The patient's total gastric acidity increased following radiation of large areas of skin.

After the use of Benadryl, taken orally for a week, the threshold of response to radiation was raised in both patients, but the skin sensitizing properties of the serum were not affected. Gradually increasing ultraviolet exposures produced tolerance to the active wave lengths and it was soon possible to discontinue the antihistaminic agents. I. GLAZER.

Nature of Inhibition of Ultraviolet Erythema by Pyribenzamine. Baer, R. L., Kline, P. R., and Rubin, L.: J. Invest. Dermat. **11**: 405, 1948.

Skin sites prepared by introducing Pyribenzamine and Benadryl solutions by iontophoresis were exposed to ultraviolet irradiation. The ultraviolet erythema was less on these sites than on normal sites. However, the inhibition of the erythema was found to be much greater when the antihistaminic agent was placed in a quartz cup and was interposed between the source of radiation and the skin. This indicates that these drugs act by filtering out the wavelengths producing ultraviolet erythema, rather than by exerting an antihistaminic effect. Pyribenzamine is more effective in this respect than Benadryl, because it absorbs more of the wavelengths responsible for ultraviolet erythema. Pyribenzamine should not be used topically or orally as a sunburn preventive, except under unusual circumstances.

B. SIEGEL.

Sensitization to Monoglycerol Para-Aminobenzoate. Meltzer, L., and Baer, R.: J. Invest. Dermat. **12**: 31, 1949.

An eczematous contact-type of hypersensitivity was traced to the use of glycerol para-aminobenzoate, a filter used in modern sunburn preventives. This patient showed positive patch tests to this and numerous other compounds. These substances included sulfonamides, procaine, benzocaine, Butesin, para-aminobenzoic acid, paraphenylenediamine, aniline, pieric acid,

and azodye A. This patient had shown definite reactions to sulfaquanidine and benzocaine several years previously. It is suggested that the sensitization to aniline may account for the cross sensitization to many of these chemicals. The possibility of inducing cross sensitization when using any one of the above drugs is stressed. R. WISEMAN.

The Condensation of Phenol and Formaldehyde to Produce a Sensitizer Unrelated to the Formaldehyde Component. Gaul, E., and Underwood, G.: J. Invest. Dermat. **12**: 1, 1949.

A patient with a resin sensitivity showed positive contact reactions to both the polymerized and unpolymerized phenol-formaldehyde products. However, numerous patch tests with other substances including phenol were completely negative. Patch tests made with the phenol-formaldehyde resin on another subject who was known to be formalin sensitive were negative. It is suggested that the sensitivity in this case was directed to a new allergen formed through the condensation of phenol and formaldehyde and not to either of the original constituents alone. R. WISEMAN.

Undecylenic Acid Given Orally in Psoriasis and Neurodermatitis. A Preliminary Report. Perlman, H. H.: J. A. M. A. **139**: 444, 1949.

Undecylenic acid administered orally in seventeen cases of psoriasis and eight cases of neurodermatitis produced excellent results. The unsaturated fatty acid was given in gradually increasing doses up to a daily total of 7.5 grams. There were no harmful effects even after many weeks of treatment. There was definite improvement in all cases with disappearance of the lesions and relief of pruritus. F.

The Mechanism of Urtication in Urticaria Pigmentosa. Saunders, T. S., and Miller, O. G.: J. Invest. Dermat. **11**: 309, 1948.

In a case of urticaria pigmentosa, the use of antihistaminic drugs locally or orally failed to inhibit factitious urtication. However, when 25 mg. of Benadryl was given intravenously, wheal production on stroking was inhibited. One attempt to transfer passively the dermographism-inducing principle with the patient's blood was unsuccessful. Urtication in urticaria pigmentosa is probably due to a traumatic liberation of histamine or a histamine-like substance. B. SIEGEL.

Dermatitis Due to Invisible Ink. Report of a Case. Bloom, D., and Weiner, M. A.: J. Invest. Dermat. **11**: 197, 1948.

A 9-year-old girl on leaving a private swimming pool was stamped on her forearm with invisible ink for the purpose of identification. On returning, the girl exposed her forearm to an ultra violet lamp and the letters "A. I." were seen to fluoresce. There had been no previous contact with this type of ink. About two months later, the patient developed an eruption with pruritus on her forearm in the form of the letters "A. I." Pruritus disappeared, but the eruption has persisted. The child had bronchial asthma due to foods. The findings on histologic examination were compatible with the diagnosis of contact dermatitis. The chemical composition of the invisible ink was unobtainable. Patch tests with the ink applied to the involved and distant sites were negative. No reaction was noted after exposing the patch tested sites to ultra violet light. Scratch tests with the ink were also negative. It is suggested that the mechanism in this case may be an allergic "spontaneous flare up" phenomenon similar to sensitization to mercury in tattoo cases. B. SIEGEL.

Generalized Angiomatosis Simplex Cutis Following an Erythema Morbilliforme Probably Caused by the Use of Pyribenzamine. Oppenheim, M., and Yacullo, W. A.: Brit. J. Dermat. **60**: 368, 1948.

A generalized pruritic morbilliform erythema in a 53-year-old white man was treated with Pyribenzamine administered orally in 50 mg. doses four times daily for seven days. Two months later, desquamation occurred followed by the appearance of numerous small red spots resembling telangiectasia, which on histologic section proved to be angioma simplex. The lesions were attributed to the Pyribenzamine. C.

Otorhinology and Ophthalmology

An Evaluation of an Antihistaminic Drug in Experimental Uveitis. Leopold, I. H., Dean, W., and Blazar, H.: Am. J. Ophth. **32**: 31, 1949.

Studies were undertaken to determine the ability of Pyribenzamine to control anaphylactic involvement of the uveal tract in rabbits. Fifty-eight eyes were injected intravitreally with a sensitizing dose of 0.1 c.c. of horse serum and ten days later a shocking dose of 1 c.c. of horse serum was given intravenously. Five of the rabbits were given Pyribenzamine intramuscularly six hours before the shock dose of horse serum; five received it simultaneously with the shock dose; and five, twenty-four hours after the shock dose. In addition Pyribenzamine solution was administered subconjunctivally to nine rabbits. The dose was given six hours prior to, simultaneously with, or twenty-four hours after the shocking dose. Adequate controls were employed. It was found that systemically administered Pyribenzamine prevented the development of an anaphylactic type of uveal inflammation only when given prior to the shocking injection of horse serum. It failed to clear up the inflammation when given simultaneously with or after the shocking injection. Pyribenzamine administered locally by subconjunctival injection failed to prevent or to clear the anaphylactic uveal reaction when given before or after the shocking dose. This indicates that the anaphylactic type of ocular hypersensitivity reaction may be prevented by antihistaminic drugs but cannot be treated successfully with this medication once the ophthalmic reaction has been established. It is suggested that antihistaminic drugs be used for the prevention of endophthalmitis phaco-anaphylactica and sympathetic ophthalmia. C.

pH of Nasal Secretion in Situ in Infants and in Children: The Effect of Hyperventilation and Crying. Fabricant, N. D., and Perlstein, M. A.: Arch. Otolaryng. **48**: 67, 1948.

The pH of nasal secretion in situ in the normal nasal passages of infants and children varies from 5.0 to 6.7, which is approximately the same range as that of normal adults. In thirteen children during periods of hyperventilation, six showed a measurable trend toward nasal alkalosis. In twenty-three of twenty-six infants and young children during periods of crying, the dominant finding was the establishment of an alkaline nasal state. C.

Use of Privine-Antistine Drops in Ophthalmology. Daily, R. K., and Daily, L., Jr.: Am. J. Ophth. **32**: 441, 1949.

A combination of 0.5 per cent Antistine (a synthetic antihistaminic drug) and 0.025 per cent Privine was instilled into the conjunctival sac in 100

patients with various types of conjunctivitis. It produced a rapid decongestion of the conjunctiva, reduced blepharospasm, and relieved the burning, itching, photophobia, and lacrimation in allergic conjunctivitis. It produced a mild pupillary dilatation but had no effect on the intraocular pressure.

C.

Dangers of Irradiation of Hypertrophied Lymphoid Tissue of the Nasopharynx. Schulz, M. D., and Robbins, L. L.: Tr. Am. Acad. Ophth., Jan.-Feb., 1949, p. 243.

The use of radium in the treatment of hypertrophied lymphoid tissue of the nasopharynx has become popular in recent years. In order to emphasize the potential danger of the procedure, the authors present a series of selected cases in which irradiation of benign lesions of the skin resulted in the appearance, ten to twenty-five years later, of serious irradiation changes and carcinomatous lesions. These unusual changes in the skin and mucous membranes were rare sequelae of amounts of radiation which are comparable to those now used in irradiation of the nasopharynx. There is room for speculation as to similar incidents resulting from the present-day treatment. C.

Hypertensive Allergic Iridocyclitis. Cardello, J.: Rassegna ital. d'ottal. **17**: 264, 1948.

Four patients with acute ocular hypertension manifested allergic symptoms such as gastrointestinal allergy, urticaria, and vasomotor rhinitis. The hypertension subsided spontaneously, but periodic recurrences were accompanied by other allergic symptoms. It is suggested that ocular hypertension may be due to an allergic edema of the vitreous. C.

Sensitivity to Pontocaine Instilled Locally. Cowan, T. W.: Am. J. Ophth. **32**: 263, 1949.

A marked local reaction followed the surgical removal of a chalazion. During the procedure, 0.5 per cent Pontocaine had been used topically, 1 per cent Novocain had been injected, and penicillin ointment had been introduced into the conjunctival sac. Patch tests resulted in a positive reaction to Pontocaine and negative ones to Novocain and penicillin. C.

Miscellaneous Allergies

Tuberculin Reaction. III. Transfer of Systemic Tuberculin Sensitivity With Cells of Tuberculous Guinea Pigs. Kirchheimer, W. F., Weiser, R. S., and Van Liew, R.: Proc. Soc. Exper. Biol. & Med. **70**: 99, 1949.

Peritoneal exudate obtained from guinea pigs sensitized with living *Mycobacterium tuberculosis* was injected intraperitoneally into healthy guinea pigs. After forty-eight hours, each recipient was challenged with an intraperitoneal injection of old tuberculin. All eight animals developed typical tuberculin shock, five of them succumbing in from twenty to fifty hours. Control animals were injected intraperitoneally with peritoneal exudate from normal donors, from donors sensitized with living *Mycobacterium smegmatis*, and from donors previously injected with powdered quartz. These recipients were similarly challenged with O.T. Only one animal developed tuberculin shock. Guinea pigs were injected intraperitoneally with peritoneal exudate from tuberculous donors previously desensitized by increasing subcutaneous doses of

O.T. When these animals were challenged with O.T., one developed mild tuberculin shock and recovered and two showed no symptoms, but one of these guinea pigs died suddenly after fifty-two hours. Bacteriologic examination of the peritoneal fluid in all fatal cases was negative for tubercle bacilli. Apparently, systemic as well as cutaneous tuberculin sensitivity in the guinea pig can be passively transferred with the cells of peritoneal exudates of tuberculous animals. B. SIEGEL.

Potential Antigenicity of Parenterally Administered Cytochrome C. Roth, L. W., Richards, R. K., and Shepperd, I. M.: Proc. Soc. Exper. Biol. & Med. **70**: 116, 1949.

Groups of guinea pigs were sensitized intraperitoneally with different brands of cytochrome C made from either equine heart tissue extract or a mixture of equine and bovine heart tissue extracts. When adequate doses were used for sensitization, shocking injections with two of the brands produced anaphylactic shock in all animals tested. Animals sensitized with the third brand of cytochrome C could not be shocked. Cross sensitivity existed between the two brands which elicited reactions. The antigenicity of the brands varied. Cross sensitivity between cytochrome C and horse serum could not be demonstrated. The authors recommend preliminary skin testing on patients about to receive intravenous cytochrome C in order to prevent serious reactions in potentially sensitive individuals. B. SIEGEL.

The Schoenlein-Henoch Syndrome. Gairdner, D.: Quart. J. Med. **17**: 95, 1948.

Twelve patients with Schoenlein-Henoch syndrome were studied. Ten were children between the ages of 4 and 15, and two were adults. Ten of the patients were males. Cutaneous and gastrointestinal symptoms were present in all. Eight had blood in the stool and vomiting occurred in six. Joint manifestations were present in ten patients. All but one patient had some renal involvement, four showing gross hematuria and seven, microscopic. Follow-up of these patients revealed that the nephritis could go on to recovery, to latent nephritis, to chronic nephritis, or to rapidly developing renal failure and death. The writer discourages the use of the term anaphylactoid purpura in connection with this illness because purpura is not uniformly present nor is it the essential histologic feature. Evidence is presented in support of the concept that the Schoenlein-Henoch syndrome, acute nephritis, rheumatic fever, and polyarteritis nodosa form a single group of diseases. The common pathogenetic feature of this group is probably an antigen-antibody reaction which takes place principally in the endothelium of certain blood vessels. A common antigen is probably some derivative of the hemolytic streptococcus, but proteins derived from other organisms or from nonbacterial sources may also initiate the process. The blood vessels involved in the Schoenlein-Henoch syndrome are the small vessels of the skin, intestines, synovia, or glomeruli. H.

The Role of the "Wax" of the Tubercle Bacillus in Establishing Delayed Hypersensitivity. I. Hypersensitivity to a Simple Chemical Substance, Picryl Chloride. Raffel, S., and Forney, J. E.: J. Exper. Med. **88**: 485, 1948.

The purified wax fraction of tubercle bacilli has the property of inducing the delayed type of cutaneous sensitivity to tuberculin. Picryl chloride administered parenterally is an effective anaphylactogen. This characteristic

is quite independent of its ability to induce the contact-type of dermatitis when applied to the skin. Contact-type sensitivity is not elicited by the parenteral injection of picryl chloride. However, in guinea pigs the intraperitoneal injection of picryl chloride in conjunction with the purified wax fraction of tubercle bacilli results in delayed cutaneous sensitivity reactions to both patch and intracutaneous applications of picryl chloride. Tuberculous guinea pigs showed similar development of cutaneous sensitivity following either local or parenteral treatment with picryl chloride. The possibility that spontaneous contact hypersensitivities may depend on similarly active lipoidal components of the skin is discussed. K.

Gastrointestinal Food Hypersensitivity. Roentgenographic Demonstration. Tallant, E. J., O'Neill, H. A., Urbach, F., and Price, A. H.: Am. J. Digest. Dis. **16**: 140, 1949.

Roentgenographic studies of the gastrointestinal tract were made in twelve patients with histories of gastrointestinal allergy. Control studies were carried out on eight nonallergic persons and on five patients with allergic symptoms, which did not involve the alimentary tract. Studies of the small bowel were first made with a barium-water mixture and were repeated several days later with a barium-allergen mixture. The control studies were essentially normal, but the patients with gastrointestinal complaints showed roentgenographic abnormalities consisting of narrowing, segmentation, and scattering after the barium-allergen feedings. The changes noted are not in themselves specific, but assume significance in the light of the normal findings with the water-barium meal. F.

Constitutional Factors in Resistance to Infection. II. The Effect of Estrogen on Tuberculin Skin Sensitivity and on the Allergy of the Internal Tissues. Lurie, M. B., Harris, T. N., Abramson, S., and Allison, J. M.: Am. Rev. Tuberc. **59**: 186, 1949.

The effects of various hormones on the degree of tuberculin reaction were tested in rabbits sensitized with heat-killed tubercle bacilli. Estrogen reduced the inflammatory response of the skin but failed to influence the polymorphonuclear leucocytosis which followed subcutaneous administration of tuberculin. Caseation was not reduced in estrogen-treated animals and estrogen failed to affect the inhibition of growth of tissue explants by tuberculin. Chorionic gonadotropin, progesterone-estrogen injections, and ovariectomy also diminished skin reactivity to tuberculin. The skin reactivity bore no relationship to the progress of the disease. Estrogen masks existing allergic irritability by depressing the inflammatory response of the skin to irritants in general. K.

Four Cases of Carditis Occurring in Children and Associated With the Administration of a Foreign Serum. Rosenthal, D. B.: M. J. Australia **1**: 335, 1948.

Four cases are presented in which polyarthritis, an increased sedimentation rate, and carditis followed the injection of a foreign serum. In three patients the serum sickness occurred in the interval between the serum injection and the onset of the carditis. The close resemblance between some of the symptoms of rheumatic fever and of serum sickness makes the diagnosis of the etiology of the carditis difficult in these cases. It is possible that the serum sickness was purely coincidental to the development of the rheumatic fever. It is also possible that the carditis may have been a reactivation of subclinical rheumatic fever induced by "protein shock." H.

Histaminic Treatment of Foreign Protein Type Reactions. Prince, H. E., and Etter, R. L.: Ann. Allergy **6**: 386, 1948.

Eight patients with penicillin drug sickness and one patient with serum sickness were treated with large doses of histamine administered intravenously or intracutaneously. Antihistaminic drugs and other therapeutic agents had been ineffective. Histamine acid phosphate in doses of 2.75 mg. dissolved in 250 c.c. saline were infused every six to eight hours at a rate just sufficient to produce a generalized flush. When veins were inaccessible, intracutaneous injections were given. This therapy was continued from one to eight days producing subjective relief in all patients. W.

Effects of Allergy on the Ethmoid Sinuses. Schenck, H. P.: Arch. Otolaryng. **49**: 48, 1949.

The ethmoid and maxillary sinuses, because of their intimate association with the turbinate bodies (the primary shock organ), are the first of the pneumatic cells to participate in the allergic response. The frontal sinus is involved to a lesser extent and the sphenoids, because of their remote position, are rarely involved in allergic changes. The primary allergic response in the turbinate tissue may be initiated by direct contact with an air-borne allergen or indirectly from the gastrointestinal tract by way of the blood stream. The former is the more frequent method. The earlier formation of polypus in the ethmoid region is due to the extreme thinness of the mucous membrane of the ethmoid air cells, a characteristic which renders this region more responsive to allergic stimuli than maxillary mucosa. Polypi may produce abnormal contact and pressure in the olfactory areas and in the region of the sphenopalatine ganglion thus precipitating attacks of intrinsic asthma. Nasal obstruction with resultant mouth breathing permits air-borne allergens to reach the lower respiratory tract directly. Allergic ethmoidal tissue cannot combat infection effectively and chronic infection results which favors bacterial sensitization. C.

Anaphylaxis

Quantitative Studies in Anaphylaxis. I. Influence of Age and Body-Weight of Guinea Pigs on the Sensitizing and Shocking Dose. Coulson, E. F., and Stevens, H.: J. Immunol. **61**: 1, 1949.

Guinea pigs from 2 weeks to 3 years of age were sensitized by single intra-abdominal injections of ovalbumin and shocked intravenously twenty-one days later. The median sensitizing dose (SD50), when computed on the basis of dose per kilogram, tended to decrease as the age increased from 2 to 20 weeks, but when computed on the basis of dose per animal, SD50 varied insignificantly. There was a twentyfold increase in SD50 for the 1- to 3-year-old age groups which proved to be less susceptible to sensitization. SD50 was not influenced by the sex of the animal.

Animals 2, 4, and 7 weeks old were sensitized with 0.1 or 10 mg. of ovalbumin irrespective of weight and given a shocking dose on the basis of body weight. When the median lethal dose (LD50) was computed on the basis of dosage per kilogram, it tended to decrease as the animals grew older and heavier, but LD50 was not affected by age within these limits when calculated on the basis of dose per animal. Animals 2 to 17 weeks old were sensitized with 1 mg. of ovalbumin and challenged on the basis of dose per individual. LD50 when computed on the basis of dose per individual was the

same for 2- and 7-week-old groups, but was twice as much for the 17-week-old animals. It appears unlikely that LD50 is correlated to body weight. The onset of symptoms following the shock dose and time of death were delayed in older animals. LD50 was not influenced by sex. I. GLAZER.

Quantitative Studies in Anaphylaxis. II. The Relationship of the Shocking Dose to the Sensitizing Dose. Coulson, E. F., Stevens, H., and Shimp, F. H.: J. Immunol. **61**: 11, 1949.

Guinea pigs, 4 weeks old and weighing from 290 to 310 Gm., were sensitized intra-abdominally with doses of ovalbumin ranging from 0.01 mg. to 100 mg. per animal. Twenty-one days later, these animals were shocked intravenously. With the exception of those sensitized with 0.01 mg., there was a progressive increase in percentage of fatal shock with increase in challenging dose. Moreover, as the sensitizing dose increased, the fatal shocking dose also rose. The LD50 increased rapidly—the sensitivity diminished—with increase of sensitizing doses within the range of 0.1 to 20 milligrams. Beyond this point increase in sensitizing dose necessitated only a relatively slight increase in LD50. Under certain conditions the minimal fatal shock doses may be smaller than the lowest dose that is sufficient to sensitize. I. GLAZER.

Quantitative Studies in Anaphylaxis. III. Effects of the Alum Adjuvant and Route of Administration on the Sensitizing Dose. Coulson, E. F., and Stevens, H.: J. Immunol. **61**: 119, 1949.

Two similar groups of guinea pigs were sensitized with identical techniques except that in one group ovalbumin in saline was used and in the other, alum precipitated ovalbumin was employed. The sensitizing capacity of ovalbumin in saline solution, when given intra-abdominally, was one and one-half times greater than when given intravenously, and two and one-half times greater than when given subcutaneously. Only the latter difference was of statistical significance. For alum precipitated ovalbumin given subcutaneously, the sensitizing capacity was two and one-half times greater than that given intra-abdominally, and sixty times greater than that given intravenously. Both these differences were statistically significant. The median sensitizing dose of ovalbumin in saline was from four to four hundred times greater than that of alum precipitated ovalbumin depending upon the route of administration. I. GLAZER.

Anaphylactoid Shock Produced by Anti-Platelet Serum. Cruz, W., and Da Silva, E.: Proc. Soc. Exper. Biol. & Med. **70**: 210, 1949.

Rabbits and guinea pigs were given either intravenous or intraperitoneal injections of washed species-specific platelets in order to produce antiguinea pig, antidog, antirat, and antirabbit platelet sera. Over 95 per cent of thirty-three guinea pigs responded with typical anaphylactoid shock following the intracardial injection of antiguinea pig platelet serum. The majority of the animals died within the first hour. Of those surviving, most died from twenty-four to forty-eight hours later with signs of purpura. At autopsy, marked emphysema of the lungs along with edema and hemorrhage was always present. Characteristic findings of shock for the respective species were similarly observed in rats, rabbits, and dogs following intravenous injection of their homologous antiplatelet sera. Although there was a marked drop

in blood pressure during shock in dogs, anaphylaxis in this species appeared to be mild since none of the animals died. Rabbits and guinea pigs showed only a temporary fall in blood pressure but the shock usually was lethal. It is suggested that the injection of species-specific antiplatelet serum represents another means of inducing anaphylaxis. R. WISEMAN.

Further Studies in Experimental Allergic Encephalitis in the Guinea Pig. Kaprowski, H., and Jervis, G. A.: Proc. Soc. Exper. Biol. & Med. **69**: 472, 1948.

Subcutaneous inoculation of guinea pigs with adjuvants and brain tissue of different species produced paralysis and eventual death in 35 to 70 per cent of the tested animals. By using progressive dilutions of phenolized rabies vaccine it was found that the concentration of antigen was a definite factor in determining the extent of the pathologic response. Various lipoid fractions also produced paralysis in a definite percentage of animals and the pathologic picture was the same as that obtained with whole brain tissue. Intracerebral reinoculation of the antigen without adjuvants produced a high mortality in those animals reinjected with the same species of brain tissue with which they had previously been sensitized. Animals reinjected intracerebrally with brain tissue of a different species had a very low mortality. An Arthus-like lesion of greatest intensity near the site of intracerebral reinoculation was found in those animals dying most rapidly. When death was delayed for a prolonged period, numerous disseminated areas of demyelination and perivascular infiltration were observed.

Complement fixing antibrain antibodies were found in all the guinea pigs injected with brain substance incorporated into adjuvants, and were absent when no adjuvants were used. Brain specific antibodies appeared in all injected animals irrespective of the species source of the brain tissue inoculum, but these antibodies were not species specific. In general no correlation was observed between the titer of antibrain antibodies and the clinical picture presented. R. WISEMAN.

The Response of Eosinophils in the Guinea Pig to Sensitization, Anaphylaxis and Various Drugs. Samter, M.: Blood **4**: 217, 1949.

Guinea pigs were sensitized intraperitoneally with horse serum and were reinjected intracardially three weeks later. Some were reinjected with crystalline ovalbumin. Following sensitization, none of the animals developed an eosinophilia. However, twenty hours following reinjection, the eosinophil count varied up to 26 per cent and was independent of the severity of anaphylactic symptoms. Reinjection of a nonrelated antigen in sensitized guinea pigs did not produce an eosinophilia. Sensitized guinea pigs were injected subcutaneously or intraperitoneally with various antihistaminic drugs thirty minutes prior to the reinjection of the antigen. The drugs protected against anaphylaxis but did not abolish the eosinophilic response. In a group of animals which survived the reinjection of the homologous antigens, there was no correlation between the appearance of eosinophils in the peripheral circulation and the intensity of the shock symptoms. When sensitized guinea pigs were injected intracardially with adenosine or heparin, no significant change in the percentage of blood eosinophils was noted. The number of fatal reactions following histamine injection was about the same in sensitized and nonsensitized animals, but the eosinophilic response in the latter groups was insignificant as compared to that in the former. The average eosinophil counts in the bone marrow of sensitized guinea pigs reinjected with horse

serum were only slightly higher than the average in nonsensitized controls, while the counts of those reinjected with ovomucin were considerably higher than the controls. There was a marked variation in marrow eosinophil counts in the guinea pigs of the same group. The eosinophil counts in the peripheral blood and the bone marrow could not be correlated. However, there appeared to be a definite correlation between peripheral and lung eosinophilia. Antihistaminic drugs did not abolish the eosinophilic response in the lungs.

B. SIEGEL.

Comparison of Atropine and Tripelennamine in Treatment of Peptone Shock in Dogs. Davis, J., and Haterius, H.: Proc. Soc. Exper. Biol. & Med. **70**: 275, 1949.

Twenty-two dogs were injected intravenously as rapidly as possible with a 20 per cent solution of Witte's peptone. Ten minutes prior to the injection, the dogs were prepared intravenously with atropine sulphate, with tripelennamine, or with a combination of both. Six controls receiving only peptone died within five to eleven minutes after the injection was started. Of six dogs pretreated with atropine, five survived. Five receiving Pyribenzamine and five receiving Pyribenzamine and atropine all survived. The pulse rate fell during shock but rapidly returned to normal except where a lethal reaction was developing. Regardless of the type of pretreatment used, all animals showed an initial precipitous fall in blood pressure. Judging by blood pressure levels taken twenty-five minutes after the administration of peptone, the authors found that Pyribenzamine afforded better protection than atropine.

R. WISEMAN.

Precipitin Production in Chickens. IV. The Comparison of Antibody Responses of Eight Avian Species. Wolfe, H. R., and Dilks, E.: J. Immunol. **61**: 251, 1949.

Birds were injected intravenously with beef serum and their sera tested for precipitins by the interface method. Chickens produced a titer of 1:4,800 when the serum was tested twenty-four hours after bleeding. This increased when the sera were kept for fifteen days in the refrigerator. Repeated injections caused a rise in the titer. Male pheasants developed titers of 1:25,000 which remained constant on refrigeration. Reinjection failed to cause rises in titer but the interface ring was heavier. Male chucker partridges showed an average titer of 1:6,400 with no in vitro change and with no increase after a second series of injections. Owls tested after a second series of injections showed good titers which increased after the third series and increased markedly in vitro. Male and female ducks developed low titers after a large sensitizing dose. Repeated injections caused a slight rise in titer, but no in vitro change occurred. Pigeons failed to respond following a single injection. Turkeys did not respond to the first injection and only slightly to further injections. In vitro changes were not observed. The same turkeys, when given repeated subcutaneous injections of 0.25 ml. of pregnant mare's serum containing gonadotrophic hormones, failed to develop antihormones or precipitins to horse serum.

Results with guinea fowl were negative after three intravenous injections and following an intramuscular injection of beef serum adsorbed on alum cream. Guinea fowl injected with rabbit red blood cells produced agglutinins of very low titer as compared with chickens subjected to the same procedure. There was an insignificant rise in titer after several injections. Chickens similarly treated showed a marked rise.

The immune response of the different species could not be predicted from the known response of a particular closely related species.

I. GLAZER.

Pharmacology, Physiology, and Pathology

The Toxicologic and Antihistaminic Properties of N, N'-Dimethyl-N'-Phenyl-N'-(2-Thienylmethyl) Ethelenediamine Hydrochloride (Diatrin). Ercoli, N., Schachter, R. J., Heuper, W. C., and Lewis, M. N.: J. Pharmacol. & Exper. Therap. **93**: 210, 1948.

Diatrin, a thenyl analogue of Antergan, is approximately as effective in counteracting intravenous lethal doses of histamine as Benadryl, and somewhat less effective than Pyribenzamine. Diatrin counteracts the contraction of guinea pig intestine and arteries induced by histamine and counteracts histamine-induced bronchial contraction in the perfused guinea pig lung and in the intact guinea pig exposed to aerosolized histamine. The hypotensive action in dogs and the whealing action in rabbit skin induced by histamine are also counteracted by this drug. Guinea pigs sensitized with horse serum were protected against anaphylactic shock by doses of 0.5 to 1.0 mg. per kilogram of Diatrin (ten times the dose necessary to protect against aerosolized histamine).

Diatrin administered intravenously to anesthetized dogs and cats in 1.0 mg. per kilogram doses produces a drop in the blood pressure. Diatrin was found to be about one-half as toxic for mice as Pyribenzamine when administered subcutaneously or orally, and less toxic than Antergan, Neo-Antergan, and Benadryl. Histologic studies were made on rats fed Diatrin or other antihistaminic drugs for three months. The brains of a few rats showed changes in the ganglion cells. Medial hyperplasia and hyalinosis in the walls of pulmonary arteries were present in an appreciable number of these animals. Rabbits were given intravenous injections of the various antihistaminic drugs five times weekly for six wekes. Changes in ganglion cells and pulmonary arteries were found in animals receiving high, almost lethal, doses of Diatrin, Pyribenzamine, Antergan, Neo-Antergan, and Benadryl. The above changes did not appear in those animals receiving smaller doses. K.

Autoantibodies in Human Glomerulonephritis. Lange, K., Gold, M. M. A., Weiner, D., and Simon, V.: J. Clin. Investigation **28**: 50, 1949.

A modified technique for collodion agglutination is described in detail. Collodion particles sensitized with an extract of human renal tissue were repeatedly tested against serial dilutions of sera from persons having glomerulonephritis and control subjects. Of twenty-three patients with glomerulonephritis, twelve had had evidence of this disease for less than a year. The average antibody titer was 1:918, and seven patients of the twelve had consistently positive antibody tests. Sixty-eight per cent of the forty-four determinations made were positive. Eleven patients had had glomerulonephritis longer than a year. Their average serum titer was 1:337, and antibody was demonstrable in 78 per cent of the seventy-eight determinations done. Of all 122 agglutination determinations carried out on patients with glomerulonephritis, 75 per cent were positive. Sera from sixty-eight control individuals were subjected to 126 agglutinin determinations. Nineteen per cent showed reactions to human renal tissue, the average titer being 1:78. In four subjects, or 6 per cent, positive agglutination was confirmed in over one-half of the agglutinin runs made on them. K.

New Synthetic Anti-Histamine Substance Derived From Phenothiazine (Phenergan, 3277 R.P.). Halpern, B. N., and Hamburger, J.: Canad. M. A. J. **59**: 322, 1948.

"The degree of protection against histamine conferred by Phenergan (3277R) is much greater than that by any other anti-histamine substance."

This drug inhibits capillary permeability elicited by histamine and also prevents acute pulmonary edema induced in animals by intravenous epinephrine or poison gases, such as chloropicrin or phosgene. Phenergan also prevents experimental orthostatic albuminuria in rabbits. It was administered to human beings orally in 25-mg. tablets, from one to four times daily. It relieved urticaria and pruritus in each of seven patients with serum sickness, but failed to influence the fever. Among 123 patients with urticaria, 88 per cent experienced immediate improvement. In nineteen patients with angioneurotic edema, improvement was obtained in sixteen. In a few instances, slight relief from pruritus was obtained in a series of seventeen patients with "chronic eczema." Three patients in a group of twenty-two suffering from acute eczema cleared rapidly under Phenergan therapy. In one patient with allergic purpura, there was immediate cessation of fresh eruptions. Ninety-eight of 142 patients with hay fever (in Paris, France) were totally relieved of symptoms and thirty-six were partially relieved. Of seventy-two patients with asthma, extrinsic factors were demonstrable only in nine and these were definitely benefited by Phenergan. Twenty-one other asthmatic subjects showed "a certain degree of improvement." Six patients of a series of twenty afflicted with migraine were improved by this drug. There was no demonstrable effect on chronic or subacute rheumatism, acute glomerulonephritis, or on the intracutaneous tuberculin test.

Digestive upsets were not encountered following administration of Phenergan. A slight neutropenia occurred in two patients. Twenty-five per cent of the patients experienced drowsiness with vertigo. Insomnia was produced occasionally. The nervous symptoms usually disappeared in a few days even with continued therapy. K.

The Pathogenesis of Glomerulonephritis. A Re-Investigation of the Auto-Immunization Hypothesis. Humphrey, J. H.: J. Path. & Bact. **60**: 211, 1948.

The findings of Cavelti and Cavelti, who reported that rats injected intraperitoneally with streptococci and a suspension of rat kidney developed autoantibodies to rat kidney and subsequently showed lesions resembling glomerulonephritis, could not be confirmed. Antikidney antibodies could not be demonstrated and post-mortem studies failed to reveal any evidence of glomerulonephritis. S.

Miscellaneous

The Effect of Adrenocorticotrophic Hormone and X-Ray on the Amount of Circulating Antibody. Fischel, E., LeMay, M., and Kabat, E.: J. Immunol. **61**: 89, 1949.

Blood counts and antibody nitrogen determinations were done on twelve albino rabbits after they had been injected for several months with recrystallized chicken ovalbumin. One-half of the animals were then given 25 mg. of adrenocorticotrophic hormone subcutaneously and the other one-half were exposed to 50 roentgen units of spray radiation. Bleedings and white cell counts made during the hours after each of the above procedures revealed a uniform fall in the lymphocyte count of all the rabbits. No animal showed a concomitant rise in antibody nitrogen content. The importance of measuring antibody titers by chemical analysis instead of by gross precipitation tests was stressed. It was concluded that neither x-ray nor adrenocorticotrophic hormone was able to produce an anamnestic reaction in rabbits. R. WISEMAN.

Effect of Adrenalectomy and Adrenal Cortical Hormone Upon the Formation of Antibodies. Thatcher, J. S., Houghton, C., and Ziegler, C. H.: Endocrinology **43**: 440, 1948.

Adrenalectomized rabbits and cats maintained on desoxycorticosterone produced and maintained antibody levels to the same degree as normal controls. The antibody titer levels were unaltered by the administration of single large doses of adrenal cortical extract. No correlation was observed between the circulating lymphocyte levels and the antibody titers in either normal or adrenalectomized cats or normal rabbits. F.

Specific Serum Agglutination of Erythrocytes Sensitized With Extracts of Tubercle Bacilli. Middlebrook, G., and Dubos, R. J.: J. Exper. Med. **88**: 521, 1948.

Sheep erythrocytes were sensitized with a polysaccharide fraction of tubercle bacilli. These cells were found to be specifically agglutinable by the sera of tuberculous patients or tuberculous animals. Inhibition of agglutination could be accomplished by adding antigen to the sera prior to the addition of sensitized red cells. K.

Neurological Manifestations of Lupus Erythematosus and Periarteritis Nodosa. Sedgwick, R. P., and Von Hagen, K. O.: Bull. Los Angeles Neurol. Soc. **13**: 129, 1948.

Five patients with lupus erythematosus and five with periarteritis nodosa with involvement of the nervous system are presented. All of the nervous system lesions could be explained as sequelae of focal vascular disease which resulted in occlusion or hemorrhage. Neurological manifestations in lupus erythematosus usually arise in the central nervous system, while periarteritis nodosa chiefly affects the peripheral nerves. H.

Antihistaminic Drugs in the Therapy of the Common Cold. Brewster, J. M.: U. S. Nav. M. Bull. **49**: 1, 1949.

The effectiveness of antihistaminic drugs in the treatment of the common cold appears to be inversely proportional to the time interval between the onset of symptoms and the beginning of therapy. Cures were obtained in 116 (74 per cent) of 572 patients when treatment was begun within six hours after the onset of symptoms. When treatment was begun within the first hour, cures occurred in 19 (90 per cent) of 21 patients. Control subjects treated with a combination of codeine and papaverine or with phenobarbital showed only a low percentage of cures. It is postulated that in its early stages the common cold is an allergic reaction. If this can be aborted the likelihood of the invasion of the tissues by the pathogenic organisms which cause the usual complications of the common cold may be diminished. F.